

Work Order ID 145322

Thursday, May 05, 2016 1:32:40 PM

145322

U/R

OK
6/16/19

Page 1

Item ID: D119-646-041

Accept

N900040100

Setup

Start

NS1

Revision ID: URF 15-560

Stop

NS2

Item Name: Replacement Skidtube with Wearpads, Fits LH or RH

Start Date: 5/18/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 6/9/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

MLJ

Date:

MAY 06 2016

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3887-041	D								
IIN-D119-646	C								

100

0.00

100

DC

Doc.Control -USB or Paperwork

Memo

0.00

Photocopy bluefile & type labels per PPP D119-646-041

CHG004

DAS
21
9-89

JUL 27 2016

110

0.00

110

Skidtubes

Skidtubes

Memo

0.00

1- inspect Mat'L D2500-1-190 for damage

2-Cut tube to length as per dwg D3887 (154.8")

3- Ensure squareness of ends and scribe batch#.

16-7-12 NG/H

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐					
		OTHER : _____							

Work Order ID 145322

Thursday, May 05, 2016 1:32:40 PM

145322

Page 2

Item ID: D119-646-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: URF 15-560 Stop ***NS2***
Item Name: Replacement Skidtube with Wearpads, Fits LH or RH
Start Date: 5/18/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 6/9/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	Chemical Conversion Coat per QSI005 4.1	0.00							
120 HandFinish Hand Finishing	Memo	0.00							
									DAS 18 9-33
121	QC7-Inspect Chemical Conversion Coat	0.00							
121 QC Quality Control	Memo	0.00				1	0	16-07-13	
									DAS 18 9-33
122	QC5- Inspect part completeness to step on W/O	0.00							
122 QC Quality Control	Memo	0.00				1	0	16-07-13	

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER :			

Work Order ID 145322

Thursday, May 05, 2016 1:32:40 PM

145322

Page 3

Item ID: D119-646-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: URF 15-560 Stop ***NS2***
Item Name: Replacement Skidtube with Wearpads, Fits LH or RH
Start Date: 5/18/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 6/9/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130		0.00							
130									
Skidtubes									
Skidtubes									
	Memo	0.00							
	1- Install drill Jig DT9477 drill X-bolt spacer pilot holes using 3/16" drill first side only.								
	2- 2nd side, locating from first saddle holes use DT9861 A/B to drill 2nd side fwd saddle holes.								
	3- 2nd side locating from fwd saddle drill remaining crossbolt spacer holes using DT9477								
	4- Open crossbolt spacer holes to finished size as per dwg D3887 (section D-D and E-E) ***DO NOT OPEN FWD Saddles Holes***								
	5- Deburr, blow out chips from inside of tube.								
	6- Bond web in place as per Dwg D3887 & QSI 015.								
	A/RSikaflex-291 <u>134743</u>								
	Sikaflex expire date: <u>16-12-8</u>								
	Start: <u>15430</u> Time: _____								
	Finish: <u>16400</u> Time: _____								
	***** (Adhere for 12 hours) *****								

16-7-13 M.G R.L

[Handwritten signature]

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		FAULT CATEGORY Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : ☐							

Work Order ID 145322

Thursday, May 05, 2016 1:32:40 PM

145322

Page 4

Item ID: D119-646-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: URF 15-560 Stop ***NS2***
Item Name: Replacement Skidtube with Wearpads, Fits LH or RH
Start Date: 5/18/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 6/9/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

135

QC5- Inspect part completeness to step on W/O

0.00

135

QC

Memo

0.00

Quality Control

DAS
18
9-001 0 16-07-15

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause			FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____				
Misidentified ☐	Past Due ☐					

Work Order ID 145322

Thursday, May 05, 2016 1:32:40 PM

145322

Page 5

Item ID: D119-646-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: URF 15-560 Stop ***NS2***
Item Name: Replacement Skidtube with Wearpads, Fits LH or RH
Start Date: 5/18/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 6/9/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

140

140

Skidtubes

Skidtubes

Memo

0.00

1- Bend FWD end of tube using bender 1 and FOLIO 31 bend prog. D3887.***Must use bending aid DT9544, ensure proper positioning***

2- Cut FWD end of tube as per dwg D3887.***Verify measurement***

3- Buff out marks left from bending

4- Drill FWD cap holes using DT8215. Open FWD & AFT cap holes to 0.208"

5- Open FWD saddle holes to finished size as per dwg D3887

6- Drill FWD x-bolt spacer holes using DT9816 and open to finished size.(verify measurement)

7- Drill Tow ring hole, using DT10047 locate from FWD saddle hole. (verify measurement). Open to finished size.

8- Drill 1.87" and 3.74 holes using DT10045 A&B locate from FWD saddle hole. (verify measurement) as per dwg.

9- C'sink FWD cap hole as per detail "C"

10- Drill holes for wearpads using DT8931, open to 0.297".

11- Countersink crossbolt spacer holes, and prepare tube for welding, deburr.

12- Deburr and blow out chips from inside of tube.

16-7-15 [Signature]

16-7-18 [Signature]

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish				
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	☐ Manufacturing Process	OTHER :							
Misidentified ☐	☐ Past Due								

Work Order ID 145322

145322

Page 6

Thursday, May 05, 2016 1:32:40 PM

Item ID: D119-646-041

Accept

N900040100

Setup Start *NS1*

Revision ID: URF 15-560

Stop *NS2*

Item Name: Replacement Skidtube with Wearpads, Fits LH or RH

Start Date: 5/18/2016 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 6/9/2016 Req'd Qty: 1.00 *1*

Customer:

Reference:

Run Start *NR1*

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

150

QC5- Inspect part completeness to step on W/O 0.00

150

QC

Memo

0.00

Quality Control

DAS
18
9-89

1 0 160719

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

Work Order ID 145322

Thursday, May 05, 2016 1:32:40 PM

145322

Page 7

Item ID: D119-646-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: URF 15-560 Stop ***NS2***
Item Name: Replacement Skidtube with Wearpads, Fits LH or RH
Start Date: 5/18/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 6/9/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

160

160

Skidtubes

Skidtubes

Memo

0.00

NOTE: TACK IN 2 MOST FWD X-BOLT SPACERS AND TEST FIT FWD
GROUND HANDLING FIXTURE, IF FIXTURE FITS WELL THEN
PROCEED. FIXTURE DT10091.

1-Insert crossbolt spacers. Weld as per QSI 004 and Dwg D3887. Remember to
back drill each hole before welding the other side. Use aluminum rod
A/RAluminum Rod MB4026

2-Grind cross bolt welds flush as per Dwg D3887. Ensure no pin hole.

3-Counterbore 5/16" x 0.750" deep as per Dwg D3887.

4- Deburr & Scribe batch # on Aft end of tube.

170

170

QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

TEST FIT USING FIXTURE DT10091.

DAS
19
9-89DAS
38
9-89

JUL 20 2016

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish				
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____							
Misidentified ☐	☐ Past Due								

Work Order ID 145322

Thursday, May 05, 2016 1:32:40 PM

145322

Page 8

Item ID: D119-646-041 **Accept** ***N900040100*** **Setup Start** ***NS1***
Revision ID: URF 15-560 **Stop** ***NS2***
Item Name: Replacement Skidtube with Wearpads, Fits LH or RH
Start Date: 5/18/2016 **Start Qty:** 1.00 ***1*** **Cust Item ID:**
Required Date: 6/9/2016 **Req'd Qty:** 1.00 ***1*** **Customer:**
Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run Start** ***NR1***
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop** ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	QC10- Inspect visual per QSI004- ground welds	0.00				1			DAS 38 9.89 JUL 20 2016
180									
QC	Memo	0.00							
Quality Control									
190	Pressure Wash per QSI005 4.3	0.00				①			DAS 34 7/16/07 BEB
190									
HandFinish	Memo	0.00							
Hand Finishing	Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.								
200	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
200									1 φ 160725.33.00
Powdercoat	Memo	0.00							
Powder Coating	START TIME: 8:35 OVEN TEMPERATURE: 300° FINISH TIME: 9:05								


 SEE
 Attached

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

Work Order ID 145322

145322

Page 9

Thursday, May 05, 2016 1:32:40 PM

Item ID: D119-646-041 Accept *N900040100* Setup Start *NS1*
 Revision ID: URF 15-560 Stop *NS2*
 Item Name: Replacement Skidtube with Wearpads, Fits LH or RH
 Start Date: 5/18/2016 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 6/9/2016 Req'd Qty: 1.00 *1* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210	QC3- Inspect Part Finish	0.00							
210									
QC	Memo	0.00							
Quality Control									
220		0.00							
220									
HandFinish	Memo	0.00							
Hand Finishing	1-Install inserts as per Dwg D3887.								
230	QC5- Inspect part completeness to step on W/O	0.00							
230									
QC	Memo	0.00							
Quality Control									

DAS
15
9:30

34
9:30

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																											
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																								
Description Work Order Deviation				Disposition				Completed By																																																							
								Lead hand / Supervisor Approval Verification																																																							
								QC / QA Coordinator Approval																																																							
Root Cause		FAULT CATEGORY																																																													
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____	
Misidentified ☐	Past Due ☐																																																														

Work Order ID 145322

Thursday, May 05, 2016 1:32:40 PM

145322

Page 10

Item ID: D119-646-041 Accept *N900040100* Setup Start *NS1*
 Revision ID: URF 15-560 Stop *NS2*
 Item Name: Replacement Skidtube with Wearpads, Fits LH or RH
 Start Date: 5/18/2016 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 6/9/2016 Req'd Qty: 1.00 *1* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240		0.00							
240		0.00							
HandFinish									
Hand Finishing	☆ SEE Attached Memo 1-Install wearpads, gaskets as per Dwg D3887. Put sikaflex in insert before installing bolts and washers A/R Sikaflex-240/-291 <u>M135204</u> Sikaflex expire date: <u>1762</u> 2-assemble o'ring to plug as per dwg D3492 and apply o'ring lube A/R 55-o'ring lube batch: <u>M133145</u> 3 -Inspect for foreign objects as per QSI 024 4 -Install Aft Cap and seal with Sikaflex. Clean excess adhesive. A/R Sikaflex-240/-291 <u>M135204</u> Sikaflex expire date: <u>1762</u>								
245	QC5- Inspect part completeness to step on W/O	0.00							
245		0.00							
QC	Memo								
Quality Control									

DAS
38
9-89

JUL 27 2016

DAS
38
9-89

JUL 27 2016

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
								Completed By 	
								Lead hand / Supervisor Approval Verification 	
								QC / QA Coordinator Approval 	

Root Cause			FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence
Past Expiry Date	☐	Manufacturing Process	☐	OTHER : 						
Misidentified	☐	Past Due	☐							

Thursday, May 05, 2016 1:32:40 PM

Page 11

Packaging

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval																																																									
Description Work Order Deviation				Disposition				Completed By																																																									
								Lead hand / Supervisor Approval Verification																																																									
								QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

Work Order ID 145322***145322***

Page 12

Thursday, May 05, 2016 1:32:40 PM

Item ID: D119-646-041 **Accept** ***N900040100*** **Setup Start** ***NS1***
Revision ID: URF 15-560 **Stop** ***NS2***
Item Name: Replacement Skidtube with Wearpads, Fits LH or RH
Start Date: 5/18/2016 **Start Qty:** 1.00 ***1*** **Cust Item ID:**
Required Date: 6/9/2016 **Req'd Qty:** 1.00 ***1*** **Customer:**
Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run Start** ***NR1***
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop** ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270	QC21- Final Inspection - Work Order Release	0.00				DAS 21 9-89		JUL 27 2016	
270 QC	Memo	0.00							
Quality Control									

DAS
21
9-89 **JUL 27 2016**

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																											
Date :		Step #:		QTY Effective :			MRB (Q51042) Approval																																																								
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																							
Root Cause		FAULT CATEGORY																																																													
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	No Re-verification ☐	Operator ☐	Offset/Setup ☐	Supplier ☐	Training ☐	Use for Testing ☐	Poor Information ☐	Rushing ☐	Product Improvement ☐	Process Improvement ☐	Manufacturing Process ☐	Past Due ☐	Pressure/Forced ☐	Bending ☐	Centre Not Concentric ☐	Cracks ☐	Crimp/Kink/Ripple/Wave ☐	Cuffs ☐	Crushing ☐	Heat Treat ☐	Wave/Twist in Tube ☐	Marks/Chatter ☐	Temperature/Cure ☐	Set-up ☐	BOM/Route ☐	Broken/Damage/Defect ☐	Inspection Incomplete/Unqualified ☐	Contamination ☐	Countersink ☐	Cut Too Short ☐	Instructions Incomplete/Unclear ☐	Drill Holes ☐	Power Loss/Surge ☐	Folio/Program ☐	Grain ☐	Weld ☐	Wrong Stock Pulled ☐	Out of Sequence ☐	Off-set ☐	Mislabeled ☐	Fit/Function ☐	Misaligned/off center ☐	Positioned Wrong ☐	Outside Dimensions ☐	Over/Under tolerance ☐	Part Incorrect ☐	Part Lost/Missing ☐	Part Moved ☐	Drawing ☐	Finish ☐	Misread ☐	Turning Sequence ☐
OTHER : ☐																																																															

Picklist Print

Thursday, May 05, 2016 1:32:43 PM

Page 1

5

Work Order ID: 145322

145322

Parent Item: D119-646-041

D119-646-041

Parent Item Name: Replacement Skidtube with Wearpads, Fits LH or RH

Start Date: 5/18/2016

Required Date: 6/9/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP RevA: New issue DD verified by:EC IPP rev B
10.02.22 per PAR 09-043 EC verified by:DD IPP REVC 12.11.05
(DEOD3887-B-1)(ecn 12-675) DD verf:JLM IPP REV:D 13.03.20 per
chg003 ECN13-534 DD verf:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2500-1-190		Manufactured	No			110	Each	65.0000	1	1			
D2500-1-190									**			16-7-12 M.G	
Ext'n -I' Beam Tube 4"													
					<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>						
					LG002	65				1			
					140538	65							
D2579		Manufactured	No			140	Each	199.0000	2	2			
D2579									**			BE 16-07-19	
Crossbolt Spacer													
					<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>						
					LG001	199							
					123997	1							
					141711	198				2			
D2855-3		Manufactured	No			240	Each	33.0000	2	2			
D2855-3									**			16-07-12	
Cap													
					<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>						
					FP001	33							
					137525	33				3142564		2x	

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
								Completed By	
				Lead hand / Supervisor Approval Verification					
				QC / QA Coordinator Approval					
Root Cause		FAULT CATEGORY							
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish				
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____							
Misidentified ☐	☐ Past Due								

Picklist Print

Page 2

Thursday, May 05, 2016 1:32:43 PM

Work Order ID: 145322

145322

Parent Item: D119-646-041

D119-646-041

Parent Item Name: Replacement Skidtube with Wearpads, Fits LH or RH

Start Date: 5/18/2016

Required Date: 6/9/2016

Start Qty: 1.00

Required Qty: 1.00

NAS1611-005

Purchased

No

240

Each

463.0000

16

16

NAS1611-005

O-RING

**

ll 16/07/25

Location

Loc Qty

Loc Code

FP001

463

m129198

11

m133498

316

m134488

136

x16

D3492-5

Manufactured

No

240

Each

52.0000

16

16

D3492-5

Plug

**

ll 16/07/25

Location

Loc Qty

Loc Code

FP001

52

133396

8

136396

6

138198

2

141422

36

B142818

x16

D3672-1

Manufactured

No

240

Each

634.0000

2

2

D3672-1

Washer, Phenolic

**

ll 16/07/25

Location

Loc Qty

Loc Code

FG

10

85222

10

FP001

70

112218

70

ST049

54

127322

54

ST051A

500

134785

500

x2



DART
AEROSPACE

Work Order update only

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev I

Picklist Print

Thursday, May 05, 2016 1:32:43 PM

Page 3

Work Order ID: 145322

145322

Parent Item: D119-646-041

D119-646-041

Parent Item Name: Replacement Skidtube with Wearpads, Fits LH or RH

Start Date: 5/18/2016

Required Date: 6/9/2016

Start Qty: 1.00

Required Qty: 1.00

D3681-1 Manufactured No

160 Each 168.0000 8 8

D3681-1

Spacer

BE/B-07-19
8145956 #8

Location

Loc Qty

Loc Code

LG001

168

142904

168

D3847-1 Manufactured No

240 Each 35.0000 5 5

D3847-1

Wearpad

W 16/07/25

Location

Loc Qty

Loc Code

FP001

35

B142745

x.5

138338

10

142743

3

142854

22

D3847-11 Manufactured No

240 Each 40.0000 1 1

D3847-11

Wearpad

W 16/07/25

Location

Loc Qty

Loc Code

FP001

40

B146945

x1

138418

1

141896

15

142783

24

D3885-1 Manufactured No

140 Each 3.0000 1 1

D3885-1

Standard Web

16-7-13 MG

Location

Loc Qty

Loc Code

LG002

3

142573

142201

3

Thursday, May 05, 2016 1:32:43 PM

Shop Packet Print

Page 3

Picklist Print

Thursday, May 05, 2016 1:32:43 PM

Page 4

Work Order ID: 145322

145322

Parent Item: D119-646-041

D119-646-041

Parent Item Name: Replacement Skidtube with Wearpads, Fits LH or RH

Start Date: 5/18/2016

Required Date: 6/9/2016

Start Qty: 1.00

Required Qty: 1.00

D3903-1 Manufactured No

160 Each 350.0000 12 12

D3903-1

Spacer

**

85 16-07-19

Location

Loc Qty

Loc Code

LG001

350

142730

350

12

ALS4-1032-130 AELS4-1032-130 Purchased No

220 Each 4,742.000 30 30

ALS4-1032-130

Rivnut

**

14107125

Location

Loc Qty

Loc Code

CCK005

2900

M134502

2900

FP001

1842

M133077

172

M134502

1670

x30

AN3C5A Purchased No

240 Each 1,471.000 32 32

AN3C5A

Bolt

**

14107125

Location

Loc Qty

Loc Code

FG

5

122800

5

FP001

10

M133686

10

OVER002

1400

M134502

1000

M134676

400

x32

ST350

56

M133234

56

Picklist Print

Page 5

Thursday, May 05, 2016 1:32:43 PM

Work Order ID: 145322

145322

Parent Item: D119-646-041

D119-646-041

Parent Item Name: Replacement Skidtube with Wearpads, Fits LH or RH

Start Date: 5/18/2016

Required Date: 6/9/2016

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0332R

Purchased

No

Each

3,049.000

32

NAS1149C0332R

WASHER

**

lll 16/07/25

Location

Loc Qty

Loc Code

FP001

1582

M135046

x32

m132262

4

m132930

1004

m134063

446

m134073

128

GA

225

m133284

225

ST266

1242

m134474

142

m134574

1000

m134654

100

MS24694-C52

Purchased

No

Each

101.0000

2

MS24694-C52

SCREW

**

lll 16/07/25

Location

Loc Qty

Loc Code

FP001

95

m127059

17

m133855

78

x2

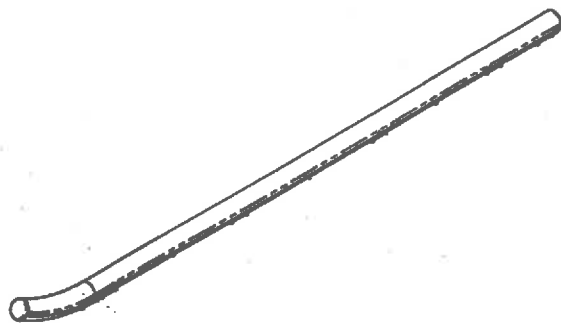
ST287

6

124308

6

8 7 6 5 4 3 2 1



D3887-041 STANDARD SKIDTUBE ASSY WITH WEARPAD (SHOWN)
D3887-043 STANDARD SKIDTUBE ASSY WITH WEARPLATE (SIMILAR)
D3887-045 STANDARD SKIDTUBE ASSY WITH TRAINING WEARPLATE (SIMILAR)

ITEM	QTY -041	QTY -043	QTY -045	PN	DESCRIPTION
1	X			D3887-041	STD SKIDTUBE ASSY WITH WEARPAD
2		X		D3887-043	STD SKIDTUBE ASSY WITH WEARPLATE
3			X	D3887-045	STD SKIDTUBE ASSY WITH TRAINING WEARPLATE
10	2	2	2	D2578	CROSS BOLT SPACER
11	2	2	2	D2855-3	CAP
12	16	16		D3482-045	PLUG ASSY
13	2	2	2	D3672-1	PHENOLIC WASHER
14	8	8	8	D3681-1	SPACER
17	5	5		D3847-1	WEARPAD
18	1	1		D3847-11	AFT WEARPAD
19		1		D3847-043	FWD WEARPLATE ASSY
20		1		D3847-045	CENTER WEARPLATE ASSY
21		1		D3847-047	AFT WEARPLATE ASSY
22			1	D3848-041	FWD TRAINING WEARPLATE ASSY
23			1	D3848-043	AFT WEARPLATE ASSY
24	1	1	1	D3885-1	STANDARD WEB
25	1	1		D3887-11	STANDARD SKIDTUBE
26			1	D3887-13	STANDARD SKIDTUBE
27	12	12	12	D3903-1	SPACER
28			16	D3904-1	WASHER
41	30	30		ALB4-1032-130	INSERT
42	32	32	2	AN305A	BOLT
43			8	AN3048A	BOLT
44	32	32		NAS1148C0332R	WASHER (OR AN980C10L)
45			8	MS21043-3	NUT
46	2	2	2	MS24894-C52	SCREW

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3885-1 WEB
POWDER COAT "WHITE" (4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 016 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D3887-041 = 32.0 lbs
D3887-043 = 37.0 lbs
D3887-045 = 38.1 lbs
- 8) WELD PER DART QSI 004
- 9) DAMAGE TOLERANCE ON FWD BEND:
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 6.5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020" DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
- 10) INSERT D3885-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/281 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP
- 11) INSERT D3482-045 PLUG ASSY INTO Ø0.197 HOLES (BOTH SIDES OF TUBE)
- 12) USE DART DRILL TEMPLATE DT8831 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARPLATE INSERTS. INSTALL AEL8-1032-130 INTO D3887-11 ONLY. INSTALL AN305A BOLTS AND NAS1148C0332R WASHERS WITH SIKAFLEX-241/281.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT

WITHOUT NOTICE
WORK ORDER
NO. 145322 M/S
16-05-20

RELEASED

2014 NOV 24
ECN 14-583

UNDER REVIEW

15.04.30 URF15-580 AP

D	REVISIONS TO TOLERANCES FOR MANUFACTURABILITY, 13.07 WAS 134.04 (2N D4-1), ADD 4.07 (2N C4-5), ADD 10.0 (2N D4-5), DELETE GASKETS (BOM, SH 2)	DB	13.09.20
C	REVISIONS TO TOLERANCES FOR MANUFACTURABILITY, 13.07 WAS 134.04 (2N D4-1), ADD 4.07 (2N C4-5), ADD 10.0 (2N D4-5), DELETE GASKETS (BOM, SH 2)	DB	13.02.19
B	REVISIONS TO TOLERANCES FOR MANUFACTURABILITY, 13.07 WAS 134.04 (2N D4-1), ADD 4.07 (2N C4-5), ADD 10.0 (2N D4-5), DELETE GASKETS (BOM, SH 2)	RF	09.06.20
A	NEW ISSUE	RF	09.03.20
REV.	DESCRIPTION	BY	DATE
DESIGN	RF		
DRAWN	DB		
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	13.09.20		

DART AEROSPACE USA, INC.
KENT, WA

DRAWING NO. **D3887** REV. D
SHEET 1 OF 8
TITLE **A119 STD SKIDTUBE ASSY** SCALE NTS

Copyright © 2014 by DART Aerospace USA, Inc. This document is the property of DART Aerospace USA, Inc. and is not to be distributed outside of the company without written permission. All rights reserved.

AN3CSA BOLT
D3672-1 PHENOLIC WASHER
NAS1149C0332R WASHER
(1 PER SIDE)

SEAL WITH
SIKAFLEX-241/291

D2855-3 CAP

D3847-11
WEARPAD

BLACK ANTI-SKID TO 0.5
ABOVE LOCATION RIDGE
TYP

11
Ø0.187
8 PL PER SIDE
REF

AN3CSA BOLT
NAS1149C0332R WASHER
24 PL

PLUG UNUSED INSERTS WITH
AN3CSA BOLT
NAS1149C0332R WASHER
8 PL

D3847-1
WEARPAD
5 PL

D2855-3 CAP

SEAL WITH
SIKAFLEX-241/291

MS24894-CS2 SCREW
(1 PER SIDE)

D3887-041 STANDARD SKIDTUBE ASSY WITH WEARPAD
(MAKE FROM D3887-11)

UNDER REVIEW

15.04.30 URF15-560 AP

RELEASED

2014 NOV 24 *q*

DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	DB	KENT, WA	
CHECKED		DRAWING NO.	REV. D
MFG. APPR.		D3887	SHEET 2 OF 8
APPROVED		TITLE	SCALE
DE APPR.		A119 STD SKIDTUBE ASSY	NTS
DATE	13.09.20	COPYRIGHT © 2009 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS UNCLASSIFIED AND IS RELEASED IN THE PUBLIC DOMAIN NOT TO BE USED FOR ANY PURPOSE OR IN ANY MANNER THAT COULD BE DETRIMENTAL TO THE NATIONAL DEFENSE	

AN3CSA BOLT
D3872-1 PHENOLIC WASHER
NAS1148C0332R WASHER
(1 PER SIDE)

SEAL WITH
SIKAFLEX-241/291

D2855-3 CAP

D3847-11
WEARPAD

D3847-047
AFT WEARPLATE ASSY

AN3CSA BOLT
NAS1148C0332R WASHER
30 PL

D3847-045
CENTER WEARPLATE ASSY

D3847-043
FWD WEARPLATE ASSY

D3847-1
WEARPAD
5 PL

BLACK ANTI-SKID TO 0.5
ABOVE LOCATION RIDGE
TYP

11
Ø0.197
8 PL PER SIDE
REF.

D2855-3 CAP

SEAL WITH
SIKAFLEX-241/291

MS24804-C52 SCREW
(1 PER SIDE)

D3887-043 STANDARD SKIDTUBE ASSY WITH WEARPLATE
(MAKE FROM D3887-11)

UNDER REVIEW

15.04.30 URF15-560 AP

RELEASED

2014 NOV 24 *q*

DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	DB	KENT, WA	
CHECKED		DRAWING NO.	REV. D
MFG. APPR.		D3887	SHEET 3 OF 8
APPROVED		TITLE	SCALE
DE APPR.		A119 STD SKIDTUBE ASSY	NTS
DATE	13.09.20	COPYRIGHT © 1999 BY DART AEROSPACE USA, INC. THIS DRAWING IS UNCLASSIFIED AND IS NOT TO BE RELEASED OR DISCLOSED TO THE PUBLIC OR TO ANY OTHER ENTITY WITHOUT THE WRITTEN AUTHORIZATION OF DART AEROSPACE USA, INC.	

AN3CSA BOLT
D3672-1 PHENOLIC WASHER
NAS1148C0332R WASHER
(1 PER SIDE)

SEAL WITH
SIKAFLEX-241/291

D2855-3 CAP

AN3C46A BOLT
D3604-1 WASHER, 2 FL
MS21043-3 NUT
8 FL

D3849-043
AFT TRAINING WEARPLATE ASSY

BLACK ANTI-SKID TO 0.5
ABOVE LOCATION RIDGE
TYP

1.5
1.5
1.5

2.00 DISTANCE TO D3885-1 WEB

1.5
1.5

D2855-3 CAP

SEAL WITH
SIKAFLEX-241/291

MS24694-C52 SCREW
(1 PER SIDE)

D3849-041
FWD TRAINING WEARPLATE ASSY

UNDER REVIEW

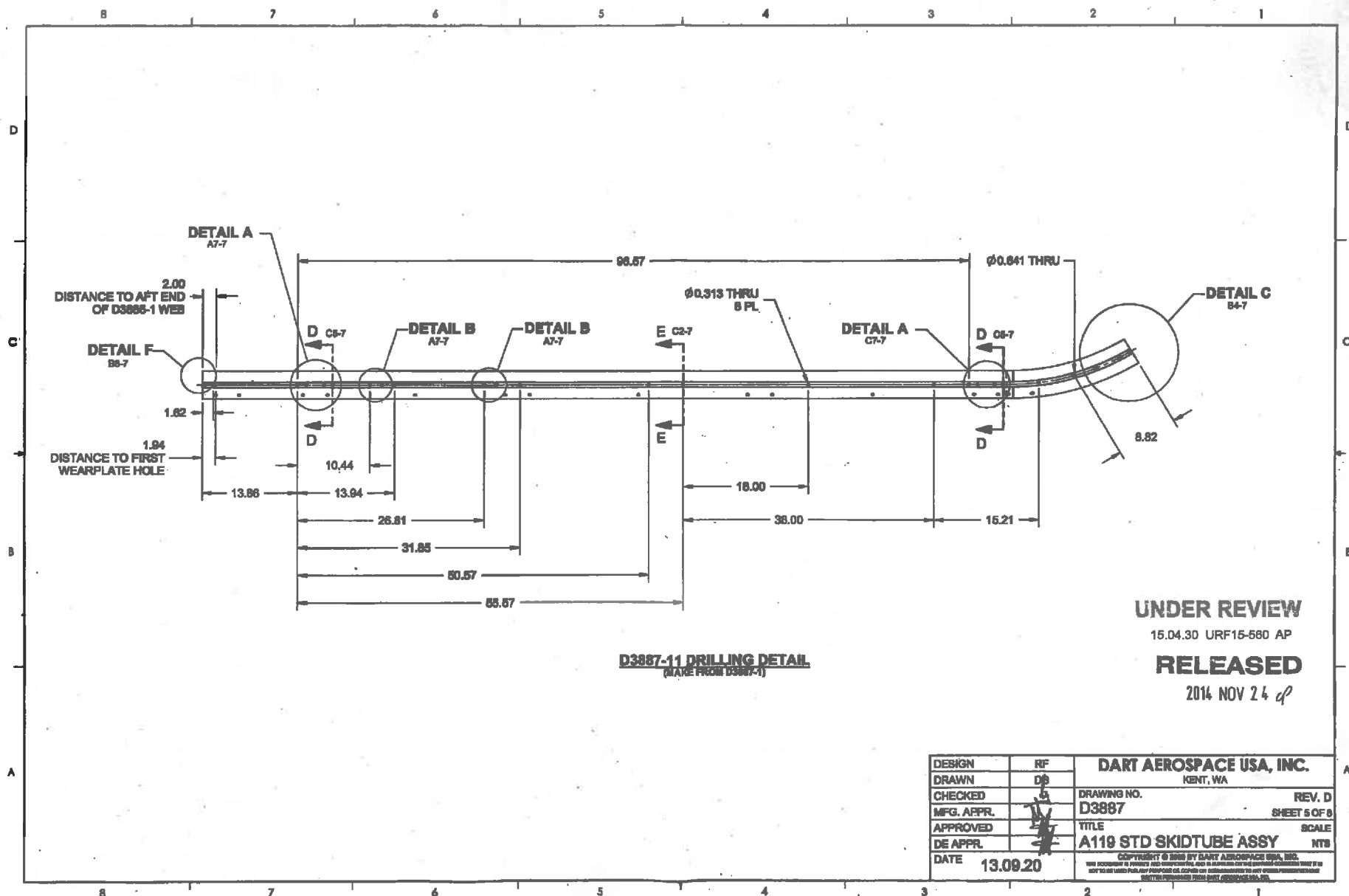
15.04.30 URF15-580 AP

RELEASED

2014 NOV 24 *dp*

D3887-045 STANDARD SKIDTUBE ASSY WITH TRAINING WEARPLATE
(MAKE FROM D3887-13)

DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	DB	KENT, WA	
CHECKED	DB	DRAWING NO.	REV. D
MFG. APPR.	DB	D3887	SHEET 4 OF 8
APPROVED.	DB	TITLE	SCALE
DE APPR.	DB	A119 STD SKIDTUBE ASSY	NTS
DATE	13.09.20	COPYRIGHT © 2000 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS UNCLASSIFIED AND IS CAPABLE OF BEING RELEASED WITHOUT LIMITATION NOT TO BE RELEASED FOR ANY PURPOSE OR ON ANY BASIS EXCEPT AS AUTHORIZED BY THE DART AEROSPACE USA, INC.	



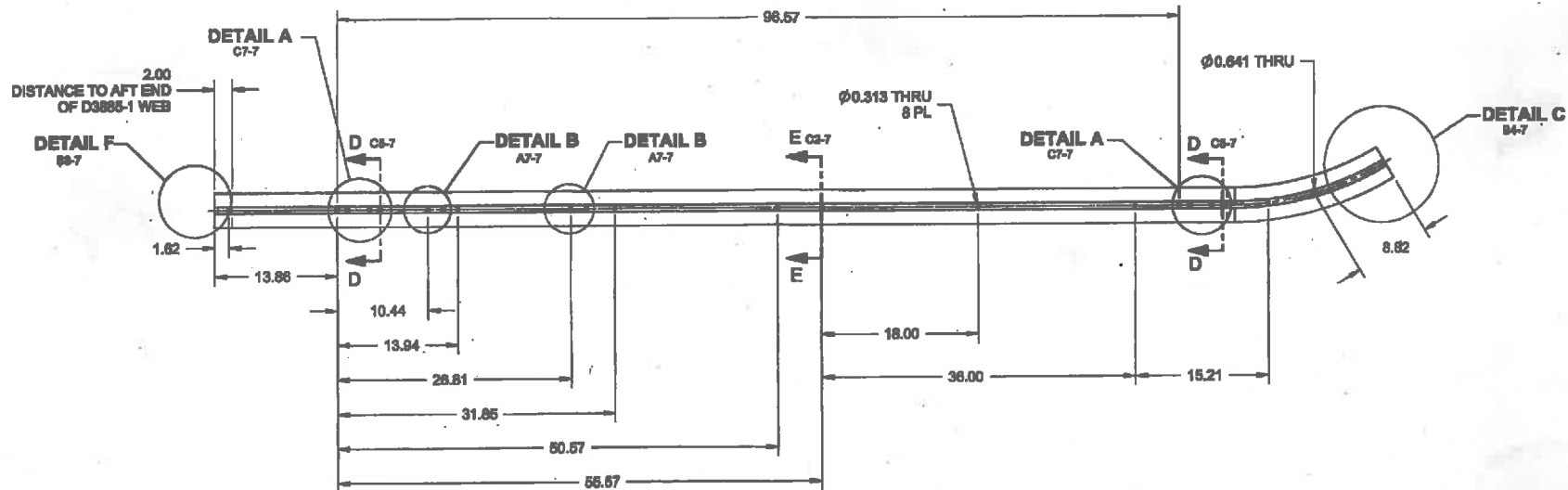
UNDER REVIEW

15.04.30 URF15-580 AP

RELEASED

2014 NOV 24 *ap*

DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	DB	KENT, WA	
CHECKED	DB	DRAWING NO.	REV. D
MFG. APPR.	DB	D3887	SHEET 5 OF 8
APPROVED	DB	TITLE	SCALE
DE APPR.	DB	A119 STD SKIDTUBE ASSY	NTS
DATE	13.09.20	COPYRIGHT © 1995 BY DART AEROSPACE USA, INC. ALL RIGHTS RESERVED. NO PART OF THIS DRAWING MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION FROM DART AEROSPACE USA, INC.	



D3887-13 DRILLING DETAIL
(MAKE FROM D3887-1)

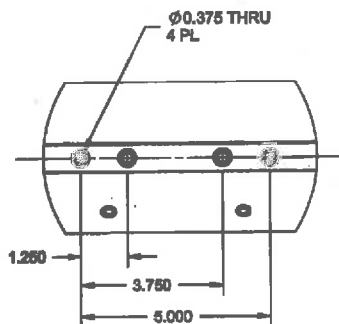
UNDER REVIEW

15.04.30 URF15-580 AP

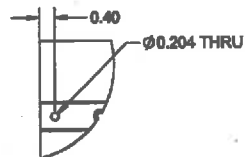
RELEASED

2014 NOV 24 *qp*

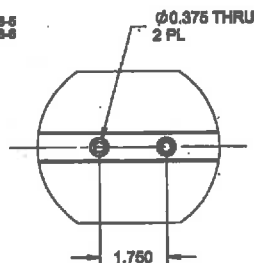
DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	DB	KENT, WA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. D
MFG. APPR.	<i>[Signature]</i>	D3887	SHEET 8 OF 8
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	A118 STD SKIDTUBE ASSY	NTB
DATE	13.09.20	COPYRIGHT © 2009 BY DART AEROSPACE USA, INC. THE DOCUMENT IS UNCLASSIFIED AND IS AVAILABLE TO THE PUBLIC. HOWEVER, IT IS NOT TO BE USED FOR ANY PURPOSES OR IN ANY MANNER THAT COULD BE DETRIMENTAL TO THE NATIONAL DEFENSE.	



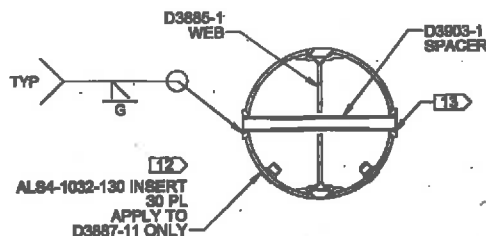
DETAIL A
SCALE 4X
C7-5
C3-5
D7-5
C3-5



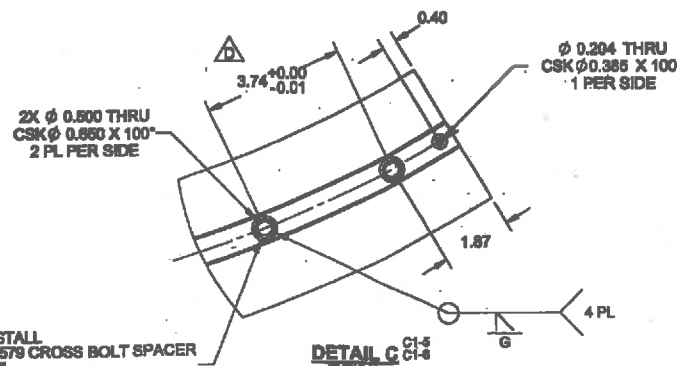
DETAIL E
SCALE 4X
C7-5
C3-5



DETAIL B
SCALE 4X
C2-5
C3-5
C8-5
C3-5

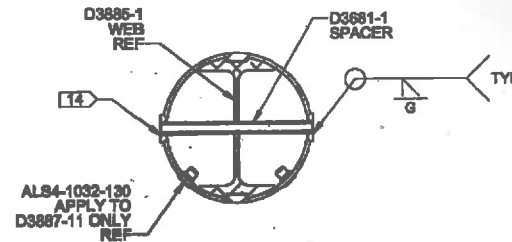


SECTION D-D
SCALE 4X
(FOR 12 X Ø0.375 HOLES PER SKIDTUBE)
C7-5
C3-5
C7-5
C2-5



DETAIL C
SCALE 4X
C1-5
C1-5

INSTALL
D2579 CROSS BOLT SPACER
2 PL

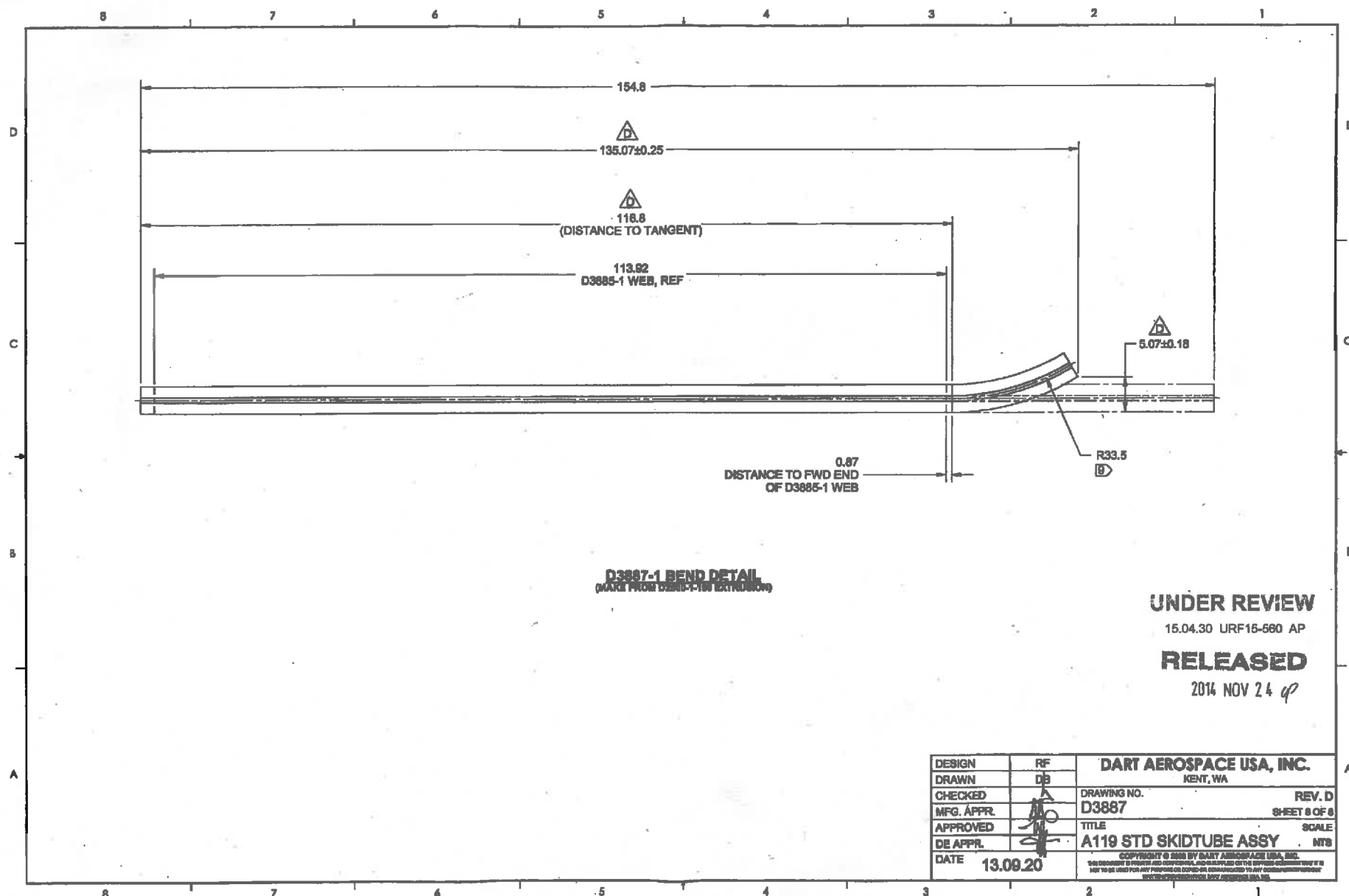


SECTION E-E
SCALE 4X
(FOR 8 X Ø0.313 HOLES PER SKIDTUBE)
C4-5
C4-5

- NOTES:**
- 13) AFTER DRILLING AND BENDING ASSEMBLY PERFORM THE FOLLOWING FOR Ø0.375 HOLES ONLY:
- i) CHAMFER HOLES Ø0.475 x 45°
 - ii) INSERT D3803-1 SPACER
 - iii) WELD INTO PLACE AND GRIND FLUSH
 - iv) CBORE TO 0.313 x 0.75 DEEP
 - v) DEBURR HOLES
- 14) AFTER DRILLING AND BENDING ASSEMBLY PERFORM THE FOLLOWING FOR Ø0.313 HOLES ONLY:
- vi) CHAMFER HOLES Ø0.354 x 45° OR 0.060 DEEP x 45° (BOTH SIDES)
 - vii) INSERT D3881-1 SPACER
 - viii) WELD INTO PLACE AND GRIND FLUSH
 - ix) DEBURR HOLES

UNDER REVIEW
15.04.30 URF15-560 AP
RELEASED
2014 NOV 24 q

DESIGN		DART AEROSPACE USA, INC.	
DRAWN		KENT, WA	
CHECKED		DRAWING NO. D3887	REV. D
MFG. APPR.		TITLE	SHEET 7 OF 8
APPROVED		A119 STD SKIDTUBE ASSY	SCALE
DE APPR.			NTS
DATE		13.09.20	



D3887-1 BEND DETAIL
(MAKE FROM D3885-1 WEB EXTENSION)

UNDER REVIEW

15.04.30 URF15-580 AP

RELEASED

2014 NOV 24 47

DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	DB	KENT, WA	
CHECKED	A	DRAWING NO.	REV. D
MFG. APPR.	10	D3887	SHEET 8 OF 8
APPROVED	21	TITLE	SCALE
DE APPR.	21	A119 STD SKIDTUBE ASSY	NTS
DATE	13.09.20	COPYRIGHT © 2000 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS UNCLASSIFIED AND IS RELEASED TO THE PUBLIC WITHOUT LIMITATION IT IS NOT TO BE USED FOR ANY PURPOSES AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT PERMISSION FROM DART AEROSPACE USA, INC.	

DQA:

Date:



WORK ORDER NON-CONFORMANCE / UPDATE

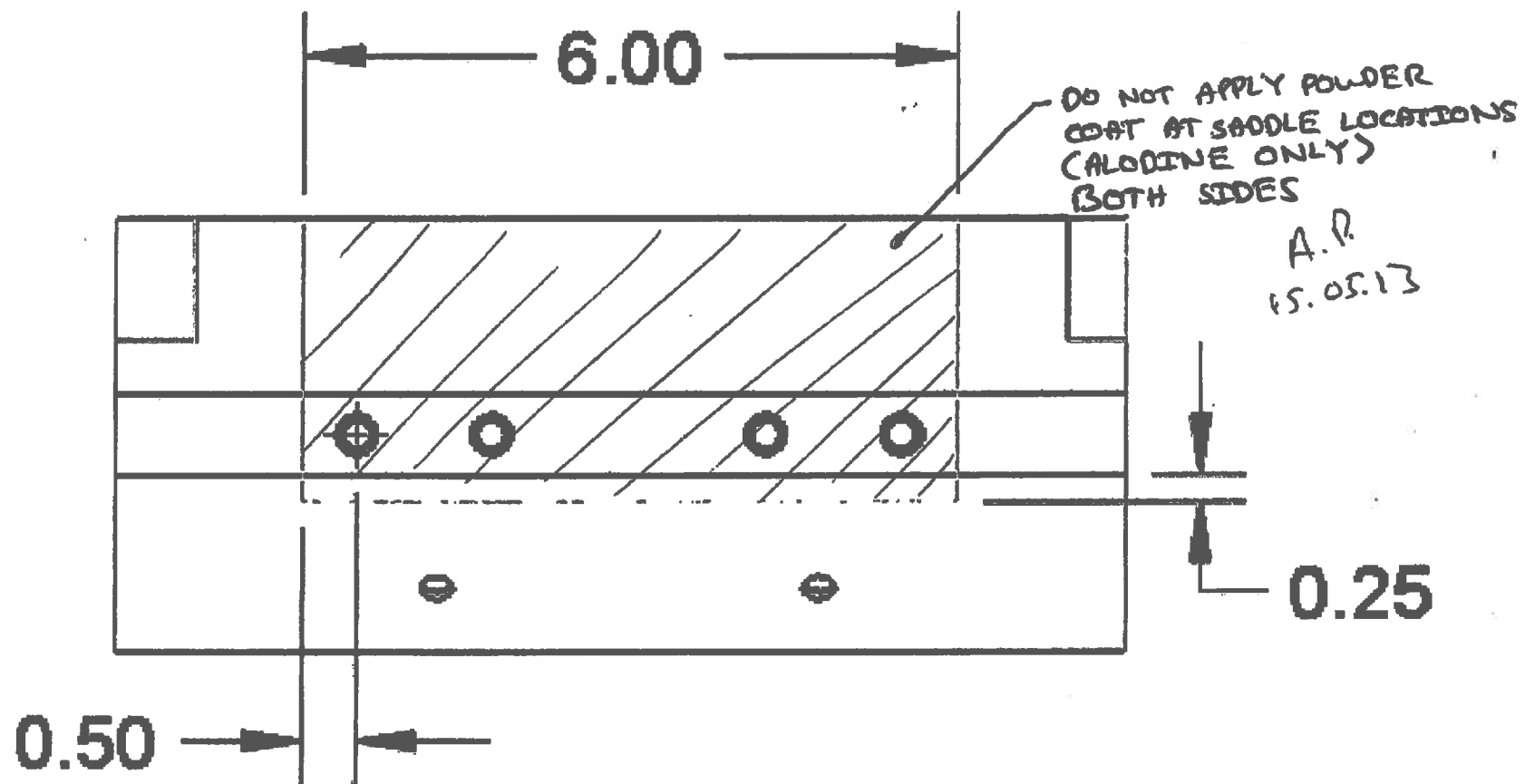
QA Closed:

Date:

Work Order update only



Work Order: <u>145322</u> Part No. <u>D119-646-041</u> NCR No. <u>16-5978</u>		DISPOSITION Rework ☒ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Cross tube ☐ Water Jet ☐ Engineering ☒ Machining ☐ Small Fab ☐ Prod. Eng. Coord. ☐ Quality ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ Large Fab ☐ Composite ☐ Supplier ☐					
Date: <u>16/5/16</u>		Step #: <u>200</u>		QTY Effective: <u>2</u>			MRB (QSI042) Approval DAS 12 16/5/16		
Description Work Order Deviation				Disposition				Completed By 16-07-20	
No powder coat on saddle region per customer request.				Acceptable per attached marking instructions				Lead hand / Supervisor Approval Verification DAS 9 16-07-20	
								QC / QA Coordinator Approval DAS 9 16-07-20	
Root Cause Environment ☐ No Re-verification ☐ Design ☒ Operator ☐ Doc/Data ☐ Offset/Setup ☐ Equip/Tooling ☐ Supplier ☐ Handling/Pre ☐ Training ☐ Material ☐ Use for Testing ☐ Internal Transport ☐ Poor Information ☐ Tribal Knowledge ☐ Rushing ☐ LOA ☐ Product Improvement ☐ Substation ☐ Process Improvement ☐ Past Expiry Date ☐ Manufacturing Process ☐ Misidentified ☐ Past Due ☐		Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		FAULT CATEGORY Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	
		☒ OTHER: <u>Customer</u>							



DQA:

Date: 16.08.29



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date: 16.08.15

Work Order update only



Work Order: <u>145322</u> Part No. <u>D119-646-041</u> NCR No. <u>16-5979</u>		DISPOSITION Rework ☒ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Cross tube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☒</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☒	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																																																					
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☒																																																																																																								
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																																																																																																								
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																																																																																																								
Large Fab ☐	Composite ☐	Supplier ☐																																																																																																									
Date: <u>16/3/16</u>		Step #: <u>240</u>		QTY Effective: <u>1</u>		MRB (QSI042) Approval DAS 12 16/5/9 9-89																																																																																																					
Description Work Order Deviation Plug unused holes with AN3C4A Bolts rather than AN3CSA Bolts.				Disposition Acceptable AN3C4A / M134861 X6				Completed By: <u>DAS 15 16/07/25</u> 9-89 Lead hand / Supervisor Approval Verification DAS 9 16-07-23 9-89 QC / QA Coordinator Approval DAS 9 16-07-23 9-89																																																																																																			
<table style="width:100%;"> <tr> <th colspan="4">Root Cause</th> <th colspan="4">FAULT CATEGORY</th> </tr> <tr> <td style="width:12.5%;">Environment</td> <td style="width:12.5%;">☐</td> <td style="width:12.5%;">☐</td> <td style="width:12.5%;">☐</td> <td style="width:12.5%;">Pressure/Forced</td> <td style="width:12.5%;">☐</td> <td style="width:12.5%;">Temperature/Cure</td> <td style="width:12.5%;">☐</td> </tr> <tr> <td>Design</td> <td>☒</td> <td>☐</td> <td>☐</td> <td>Bending</td> <td>☐</td> <td>Set-up</td> <td>☐</td> </tr> <tr> <td>Doc/Data</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>Centre Not Concentric</td> <td>☐</td> <td>BOM/Route</td> <td>☐</td> </tr> <tr> <td>Equip/Tooling</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>Cracks</td> <td>☐</td> <td>Broken/Damage/Defect</td> <td>☐</td> </tr> <tr> <td>Handling/Pre</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>Crimp/Kink/Ripple/Wave</td> <td>☐</td> <td>Inspection Incomplete/Unqualified</td> <td>☐</td> </tr> <tr> <td>Material</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>Cuffs</td> <td>☐</td> <td>Contamination</td> <td>☐</td> </tr> <tr> <td>Internal Transport</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>Crushing</td> <td>☐</td> <td>Countersink</td> <td>☐</td> </tr> <tr> <td>Tribal Knowledge</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>Heat Treat</td> <td>☐</td> <td>Cut Too Short</td> <td>☐</td> </tr> <tr> <td>LOA</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>Wave/Twist in Tube</td> <td>☐</td> <td>Instructions Incomplete/Unclear</td> <td>☐</td> </tr> <tr> <td>Substation</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>Marks/Chatter</td> <td>☐</td> <td>Drill Holes</td> <td>☐</td> </tr> <tr> <td>Past Expiry Date</td> <td>☐</td> <td>☐</td> <td>☐</td> <td colspan="4" rowspan="2">OTHER :</td> </tr> <tr> <td>Misidentified</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> </table>								Root Cause				FAULT CATEGORY				Environment	☐	☐	☐	Pressure/Forced	☐	Temperature/Cure	☐	Design	☒	☐	☐	Bending	☐	Set-up	☐	Doc/Data	☐	☐	☐	Centre Not Concentric	☐	BOM/Route	☐	Equip/Tooling	☐	☐	☐	Cracks	☐	Broken/Damage/Defect	☐	Handling/Pre	☐	☐	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Material	☐	☐	☐	Cuffs	☐	Contamination	☐	Internal Transport	☐	☐	☐	Crushing	☐	Countersink	☐	Tribal Knowledge	☐	☐	☐	Heat Treat	☐	Cut Too Short	☐	LOA	☐	☐	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Substation	☐	☐	☐	Marks/Chatter	☐	Drill Holes	☐	Past Expiry Date	☐	☐	☐	OTHER :				Misidentified	☐	☐	☐
Root Cause				FAULT CATEGORY																																																																																																							
Environment	☐	☐	☐	Pressure/Forced	☐	Temperature/Cure	☐																																																																																																				
Design	☒	☐	☐	Bending	☐	Set-up	☐																																																																																																				
Doc/Data	☐	☐	☐	Centre Not Concentric	☐	BOM/Route	☐																																																																																																				
Equip/Tooling	☐	☐	☐	Cracks	☐	Broken/Damage/Defect	☐																																																																																																				
Handling/Pre	☐	☐	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐																																																																																																				
Material	☐	☐	☐	Cuffs	☐	Contamination	☐																																																																																																				
Internal Transport	☐	☐	☐	Crushing	☐	Countersink	☐																																																																																																				
Tribal Knowledge	☐	☐	☐	Heat Treat	☐	Cut Too Short	☐																																																																																																				
LOA	☐	☐	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐																																																																																																				
Substation	☐	☐	☐	Marks/Chatter	☐	Drill Holes	☐																																																																																																				
Past Expiry Date	☐	☐	☐	OTHER :																																																																																																							
Misidentified	☐	☐	☐																																																																																																								